REMARKS

Reconsideration of the application identified in caption, pursuant to and consistent with 37 C.F.R. §1.111 and in light of the remarks which follow, is respectfully requested.

In the Official Action, claims 1-7 stand rejected under 35 U.S.C. §112, first paragraph, as being indefinite. Withdrawal of this rejection is respectfully requested for at least the following reasons.

It is noted that the term "oxygen ratio" discussed in Applicants' disclosure is commonly accepted terminology and well known in the art. Specifically, the oxygen ratio as recited in Tables 1 and 4 of the present specification represents a ratio to the amount of oxygen required for completely burning the silicon compound used as the starting material and for burning hydrogen used as a combustible gas. In this regard, for example, in U.S. Patent No. 6,063,354 to *Mangold et al* which is relied upon by the Examiner in the §102 rejection discussed below, the term "oxygen ratio" has the same meaning as in Applicants' disclosure.

The Patent Office has alleged that "the specification in Mangold defines oxygen ratio, which indicates that it is not as common as Applicant argued." Official Action at page 2. Applicants respectfully but strenuously disagree with this assertion. The fact that *Mangold et al* provides a definition of the term "oxygen ratio" constitutes evidence of the knowledge possessed by those skilled in the art. Furthermore, the context in which the term is used, i.e., to describe the conditions of the combustion reaction and the reactants involved, would have further led a skilled person to the well-accepted meaning of such term. Simply put, one skilled in the art would have understood the meaning of the term "oxygen ratio" recited in Applicants' specification, given the level of knowledge of those skilled in the art and the context of the usage of such term.

Further, Applicants note that the standard for complying with the provisions of the first paragraph of 35 U.S.C. §112 is well established. It is not necessary to "enable one of ordinary skill in the art to make and use a perfected, commercially viable embodiment. . . ." *CFMT, Inc. v. Yieldup Int'l Corp.*, 349 F.3d 1333, 1338 (Fed. Cir. 2003). "Detailed procedures for making and using the invention may not be necessary if the description of the invention itself is sufficient to permit those skilled in the art to make and use the invention." M.P.E.P. §2164. Upon review of the applicable standard of enablement under 35 U.S.C. §112, it is apparent that the level of detail and description being required in the Official Action, i.e., an explicit definition of the term "oxygen ratio" mentioned in the specification, is simply not required in the present case.

Accordingly, for at least the above reasons, withdrawal of the §112, first paragraph, rejection is respectfully requested.

Claims 1-3 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,063,354 (*Mangold et al*). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Independent claim 1 is directed to fine silica particles having an average particle size of 0.05 to 1 μm, wherein in a measurement of small-angle X-ray scattering, a fractal structure parameter α_1 at length scales ranging from 50 nm to 150 nm and a fractal structure parameter α_2 at length scales ranging from 150 nm to 353 nm satisfy the following formulas (1) and (2):

$$-0.0068S + 2.548 \leq \alpha_1 \leq -0.0068S + 3.748 \quad (1)$$

$$-0.0011S + 1.158 \leq \alpha_2 \leq -0.0011S + 2.058 \quad (2)$$

wherein S is a BET specific surface area (m^2/g) of the fine silica particles.

Mangold et al does not disclose each feature recited in claim 1, and as such fails to constitute an anticipation of such claim. For example, *Mangold et al* does not disclose fine

silica particles, wherein in a measurement of small-angle X-ray scattering, a fractal structure parameter α_1 at length scales ranging from 50 nm to 150 nm and a fractal structure parameter α_2 at length scales ranging from 150 nm to 353 nm satisfy the formulas (1) and (2).

In this regard, the Patent Office has apparently taken the position that the BET surface area and fractal dimension values disclosed in Table 1 of *Mangold et al* satisfy the recited formulas (1) and (2). Official Action at page 3. However, it is noted that *Mangold et al* discloses that the fractal dimension values were determined by N_2 adsorption under predetermined pressure conditions. Col. 2, lines 4-6; col. 8, lines 30-31. Applicants note that such a determination represents the surface state of particles over a range of **several nanometers**. Claim 1, on the other hand, recites obtaining measurements by small-angle X-ray scattering, and recites a fractal structure parameter α_1 at length scales ranging from **50 nm to 150 nm** and a fractal structure parameter α_2 at length scales ranging from **150 nm to 353 nm**. Thus, the fractal dimension of *Mangold et al* and the fractal structure parameters recited in claim 1 are measured in completely different regions, and a comparison between such values is not meaningful. It is therefore apparent that the data disclosed by *Mangold et al* fails to satisfy the formulas recited in claim 1.

With regard to the allegation concerning the inherent disclosures of *Mangold et al*, Applicants draw the Examiner's attention to the Patent Office's burden of proof for establishing an inherency. "The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic." M.P.E.P. §2112(IV) (emphasis added), citing *In re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not

be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999). In the present case, the silica particles of *Mangold et al* are produced by a method which is substantially different from an exemplary method described in the present specification, and as such, it is far from certain that the particles described by *Mangold et al* are identical to the presently claimed particles. Applicants submit that the fumed silica particles obtained by the *Mangold et al* process have a shape that is substantially more complex than the particles currently being claimed.

It is also noted that *Mangold et al* discloses that its silica particles are especially useful as polishing agents in CMP polishing processes. See the examples and Table 1. Such disclosures suggest that the *Mangold et al* particles have a relatively complex shape providing high performance in polishing applications, that is far different from the structure encompassed by the claimed formulas (1) and (2). This casts further doubt on the alleged certainty that the *Mangold et al* particles are identical to the claimed particles. Simply put, it is far from certain that the *Mangold et al* particles satisfy the claimed fractal structure parameter formulas.

For at least the above reasons, it is apparent that *Mangold et al* does not constitute an anticipation of the claims. Accordingly, withdrawal of the above rejection is respectfully requested.

Claims 1-7 stand rejected under 35 U.S.C. §102(b) as being anticipated by International Publication No. WO 01/98211 (*WO '211*), or U.S. Patent No. 7,083,770 (*Shibasaki et al*). The Examiner has relied on *Shibasaki et al* as being an English-language equivalent of *WO '211*. Official Action at page 4. Withdrawal of this rejection is respectfully requested for at least the following reasons.

Shibasaki et al does not disclose each feature recited in independent claim 1, and as such fails to constitute an anticipation of such claim. For example, *Shibasaki et al* does not disclose fine silica particles, wherein in a measurement of small-angle X-ray scattering, a fractal structure parameter α_1 at length scales ranging from 50 nm to 150 nm and a fractal structure parameter α_2 at length scales ranging from 150 nm to 353 nm satisfy the formulas (1) and (2).

Concerning the claimed formulas (1) and (2), the Patent Office has alleged that the *Shibasaki et al* particles inherently satisfy such formulas because the particles are "made by flame hydrolysis in hydrogen-oxygen gas that is similar to the method disclosed in the instant specification." Official Action at page 4. In this regard, Applicants again note the Patent Office's burden for establishing an inherent disclosure, which was discussed previously with respect to the §102 rejection based on *Mangold et al*. Briefly, it is well established that an inherency alleged by the Patent Office must be a necessary result; the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish an inherency of that result or characteristic.

In the present case, the Examiner has alleged that "the concentration of the silica in the flame is the same" as that employed in Applicants' disclosure. Official Action at page 4. Applicants respectfully but strenuously disagree. The silica concentration employed in the examples of *Shibasaki et al* set forth in Table 1 range from 0.41 to 0.63 kg/Nm^3 (6.83 to 10.5 mols/m^3), which is higher than the exemplary silica concentration range of between 0.05 and 5 mols/m^3 set forth at page 10, lines 19-24 of Applicants' disclosure. As discussed in the instant specification at pages 10-11, the fractal structure parameters generally increase with an increase in silica concentration. Thus, in view of the differing silica concentrations, one would expect the fractal structure parameters of the *Shibasaki et al* particles to be higher than

that of the particles described in Applicants' disclosure. Simply put, the Patent Office has not shown with the requisite certainty that the *Shibasaki et al* particles satisfy the claimed fractal structure parameter formulas.

Further, it is noted that *Shibasaki et al* discloses that its fine silica particles exhibit high performance as an anti-blocking agent. Col. 13, lines 49-58. In view of the fact that anti-blocking agents typically function to enhance slipping properties between films, it is generally desirable for anti-blocking agents to have structure resembling a true sphere. This is further evidence that the fractal structure parameters of the *Shibasaki et al* particles are higher than that of the claimed particles, since higher fractal structure parameters would be desirable for enhancing anti-blocking agent performance.

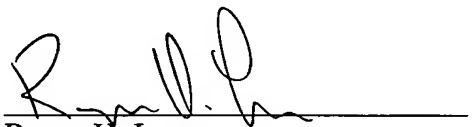
For at least the above reasons, it is apparent that *Shibasaki et al* does not constitute an anticipation of the claims. Accordingly, withdrawal of the above rejection is respectfully requested.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: February 5, 2008

By: 

Roger H. Lee
Registration No. 46317

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620